Amendments to the Claims

The following listing of claims will replace all prior versions and listing of claims in the application.

33. (currently amended) A method for programming an industrial controller, in which a user links control structures and function blocks using a graphical editor to form a motion control flowchart for the control of a machine that can be visualized on a display device, the method comprising the steps of:

a) creating a motion control flowchart, including a plurality of commands, with the use of ~~a~~ the graphical editor, the plurality of commands comprising commands provided as a function of the configuration of the controlled machine;

b) generating a textual language based on the flowchart;

c) converting such textual language into a processor-independent pseudo-code;

d) loading the processor-independent pseudo-code into the controller;

e) converting the processor-independent pseudo-code into an executable processor code~~, whereby such commands may be executed.~~;
whereby programming language commands are provided in the graphical editor as a function of the configuration of the controlled machine.

34. (currently amended) The method according to claim 33, wherein graphical elements comprising function interfaces of corresponding subprograms are generated in flowchart notation from user-defined subprograms of the ~~structured~~ textual language.

35. (currently amended) The method according to claim ~~33~~ 34, wherein the graphical elements comprise language elements for forming the motion control flowchart.

36. (previously presented) The method according to claim 33, wherein the textual language comprises structured text according to IEC 6-1131.

37. (previously presented) The method according to claim 36, wherein a user can switch between structured textual language, contact plan and function plan as forms of representation for formulating conditions.

38. (previously presented) The method according to claim 33, wherein the motion control flowchart notation comprises at least one of the group consisting of loop and parallel branch language elements.

39. (previously presented) The method according to claim 38, wherein the controller executes interpolation cycles and individual commands are initiated in a given interpolator cycle within a respective parallel branch.

40. (previously presented) The method according to claim 33, wherein parameters for the function blocks are set via a mask input.

41. (previously presented) The method according to claim 33, wherein function blocks are combined into modules that are represented as function blocks in motion control flowchart notation.

42. (currently amended) The method according to claim ~~42~~ 41, wherein interleaved modules are provided in motion control flowchart notation.

43. (previously presented) The method according to claim 33, wherein a plurality of variable assignments are supported for variables in the function blocks represented in flowchart notation.

44. (previously presented) The method according to claim 33, wherein function blocks representing functions requiring a given period of time comprise step-enabling conditions in motion control flowchart notation.

45. (previously presented) The method according to claim 33, wherein graphical elements of the flowchart are automatically positioned.

46. (previously presented) The method according to claim 33, wherein graphical elements of the flowchart are automatically linked together.

47. (currently amended) The method according to claim 33, wherein the flowchart is ~~adopted~~ adapted to be displayed in a form ~~selected from the group consisting of an enlarged form and a reduced form~~ that can be enlarged or reduced.

48. (currently amended) The method according to claim 33, wherein the textual language comprises notation facilitating its ~~re-transaction~~ re-translation to flowchart notation.

49. (currently amended) A device for programming ~~an industrial control system, in particular motion controllers~~ a motion controller, wherein control structures and function blocks are linkable by a user ~~by~~ via a graphical editor to form a motion control flowchart that can be visualized on a display device, the device comprising the ~~following successive~~ steps of:

a) means for generating a textual language from the flowchart;

b) means for compiling the textual language in a processor-independent pseudo-code;

c) means for loading the processor-independent pseudo-code into the controller; and

d) means for converting the processor-independent pseudo-code into executable processor code;

wherein programming language commands are provided in the ~~flowchart~~ flowchart editor as a function of the configuration of at least an aspect of the control system.

50. (previously presented) The device according to claim 49, wherein appropriate graphical elements comprising function interfaces of respective subprograms are generated in motion control flowchart notation based on user-defined subprograms in structured textual language.

51. (previously presented) The device according to claim 49, wherein automatically generated graphical elements are provided as language elements of the motion control flowchart.

52. (previously presented) The device according to claim 49, wherein the textual language comprises IEC6-1131 textual language.

53. (previously presented) The device according to claim 52, wherein a user may switch between structured textual language, contact plan and function plan as forms of representation in formulating conditions.

54. (currently amended) The device according to claim ~~50~~ 51, wherein the language elements in motion control flowchart notation comprise at least one of the group consisting of a loop and a parallel branch.

55. (currently amended) The device ~~for~~ according to claim 54, wherein the controller executes interpolation cycles and individual commands are initiated in a given interpolator cycle within the respective parallel branch.

56. (currently amended) The device for programming according to claim 50, wherein parameters for the function blocks are set via mask input:.

57. (previously presented) The device according to claim 50, wherein a plurality of function blocks are combined into a module that is represented as a function block in motion control flowchart notation.

58. (previously presented) The device according to claim 57, wherein interleaved modules are provided in motion control flowchart notation.

59. (previously presented) The device for programming according to claim 50, wherein a plurality of variable assignments is supported for variables in the function blocks represented in flowchart notation.

60. (previously presented) The device according to claim 50, wherein step-enabling conditions are provided in motion control flowchart notation for function blocks representing functions requiring a period of time.

61. (previously presented) The device according to claim 50, wherein graphic elements of the motion control flowchart are adapted to be automatically positioned.

62. (previously presented) The device according to claim 50, wherein graphic elements of the motion control flowchart are adapted to be automatically linked together.

63. (currently amended) The device for programming according to claim 50, wherein the motion control flowchart is adapted to be presented on the display in a form ~~comprising one of the group consisting~~ of an ~~enlarged form and a educed form visualized in a reduced or an enlarged form in the display~~ that can be enlarged or reduced.

64. (previously presented) The device for programming according to claim 50, wherein the textual language comprising notation facilitating its re-translation to flowchart notation.